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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/761,375	01/16/2001	Terry N. Williams	11675.163.2	5328
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22901 7590 08/02/2002

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EXAMINER

YUN, JURIE

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 08/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/761,375

Applicant(s)

WILLIAMS, TERRY N.

Examiner

Jurie Yun

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2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "continuously concave exterior surface extending from the base to the apex" of claim 9, the "exterior surface having a substantially paraboloid vertical profile that extends from the base to the apex" of claim 12, the "exterior surface having an ovoid profile that extends from the base to the apex" of claim 15, and the "emitter tip is generally conical and has a substantially rectilinear profile between the base and the apex" of claim 18 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-8 and 18-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,175,184 B1 in view of Jones et al. (USPN 5,663,608). All of the elements of claims 1-8 and 18-19 of the application are disclosed in claims 1-8 of USPN 6,175,184 B1 except for the emitter tip being formed from and integral with the emitter layer. Jones et al. (USPN 5,663,608) disclose the emitter tip being formed from and integral with the emitter layer (column 24, lines 62-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Williams invention and disclose the emitter tip being formed from and integral with the emitter layer, as taught by Jones et al., to simplify construction.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (USPN 5,663,608).

7. With respect to claims 9, 12, 15, 18, and 20, Jones et al. disclose a field emission device comprising a substrate (Fig. 40, 642 & 644); a cathode conductive layer (646)

disposed over the substrate; and an emitter tip (662) integral with an emitter layer (660) disposed over the cathode conductive layer and having a base, and an apex.

Jones et al. do not disclose the emitter tip having a continuously concave exterior surface extending from the base to the apex, or the exterior surface having a substantially paraboloid vertical profile that extends from the base to the apex, or the exterior surface having an ovoid profile that extends from the base to the apex, or that the emitter tip is generally conical and has a substantially rectilinear profile between the base and the apex.

The applicant acknowledges, on page 3, lines 17-18, the use of different emitter shapes as long as the emitter tip tapers to a relatively fine point. It has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Thus, it would have been obvious to one of ordinary skill in the art to provide a concave/substantially paraboloid/ovoid/rectilinear emitter shape, since such a modification would have involved a mere change in the shape of a component.

8. With respect to claims 10, 13, and 16, Jones et al. disclose a conductive gate structure (Fig. 40, 656 & 658) disposed over the cathode conductive layer (646); an aperture (664) through the conductive gate structure, the emitter tip (662) being exposed within the aperture, and an anode panel (666) positioned over the conductive gate structure and the emitter tip.

9. With respect to claims 11, 14, and 17, Jones et al. disclose an anode conductive layer (Fig. 40, 666), and a phospholuminescent panel for emitting light upon being

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excited by electrons (column 10, lines 33-39). Jones et al. do not disclose a transparent panel. However, it would have been obvious to one of ordinary skill in the art to modify the Jones et al. invention and disclose a transparent panel in order to provide image output capability of the display device.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Das et al. (USPN 5,627,427) disclose silicon tip field emission cathodes. Lee (USPN 5,977,698) discloses a cold-cathode emitter. Shealy et al. (USPN 5,949,182) disclose light-emitting, nanometer scale, micromachined silicon tips. Smith et al. (USPN 3,970,887) disclose a micro-structure field emission electron source. Greene et al. (USPN 4,513,308) disclose a p-n junction controlled field emitter array cathode.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 703 308-3535. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.

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Jurie Yun  
July 30, 2002

  
ROBERT H. KIM  
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